Colorado Department of Health

Rocky Flats Program Unit

Comments

on

DRAFT

WORKPLAN FOR

CONTROL OF RADIONUCLIDE LEVELS IN

WATER DISCHARGES FROM THE ROCKY FLATS PLANT

APRIL 5, 1991

GENERAL COMMENTS: The purpose of this workplan is to identify how DOE will meet the streams standards for radionuclides and specifically what technology will be available for use at the ponds should the water exceed the standards. Additionally DOE should recognize that significant characterization work (for example: contaminant speciation, effects of storm events on contaminant transport, etc.) still needs to be performed and should be integrated with this plan.

The document should layout specific tasks and provide more detail about each task. Particularly with respect to the treatability studies it provides only general information on the intended work and should include more detail about the methods of reviewing and selecting potential treatment technologies, unit operations and control parameters, performance data, schedules and timeframes, waste generation and handling issues, etc.

The document includes considerable discussion on DCGs versus the stream standards. This is inappropriate since the plan is to address the existing standards and should not be used as a forum for debating standards. DOE is aware that the site-specific and Basic standards for ground water and surface water radionuclides are currently under review and there is a hearing scheduled for next February on these standards.

There are numerous references to the terminal ponds treatment system that may be misleading. The purpose of the GAC for removal of organic contaminants (mainly atrazine) should be clearly specified. DOE should also make it clear that, although they anticipated that the pre-filtration before the GAC system would remove radionuclides, that, in fact, the treatment system had little affect on radionuclide concentrations. It also should provide the data, and analysis of that data, which led them to that conclusion.

Since concentrations of plutonium are statistically higher for pond C2 water and since C2 pond beta values are above the standards for Woman Creek, it would be appropriate for DOE to focus more on the C2 effluent and the treatment technologies appropriate for these constituents. This would be particularly important should an emergency discharge to Woman Creek become necessary at some point.

The workplan should acknowledge development of new analytical methods, explain how DOE will evaluate new methods for use at the plant site and provide for submitting new laboratory protocols for review.

The workplan should present separately a schedule to integrate basin-wide issues involving the cities project, CERCLA, surface and subsurface water management plans and stream standards in one or more subsequent workplans to insure compliance with the broader framework of compliance with the stream standards. The document should develop a control strategy for contaminant release for each basin, temporally and spatially. References to other approved documents or those under review should be acceptable.

SPECIFIC COMMENTS:

Appendix Figures: On page iv, Figures II-4a an II-4b should be changed to read Gross Alpha Level Histogram.

List of Acronyms and Abbreviations: Is the inclusion of DAF correct?

Executive Summary: In the last page of the executive summary the "third consequence of analytical and statistical shortcoming" is discussed. What are the first and second shortcomings, the numbered items, of the preceding paragraph, don't seem to quite fit the wordings of this subject. (shortcomings) If they are identified they need to be clearly noted.

Section 2.4.1: On page 11, the discussion concerning Walnut Creek is somewhat misleading. The natural flow of Walnut Creek would be through Great Western Res., however Broomfield built a diversion ditch which has been used to bypass the Reservoir when water is being released from the plant site.

Figure 2.6: The schematic needs to be updated to include the B5 to A4 transfer line, as well as the C2 to Broomfield diversion ditch line and the plans for C2 to B5 and C2 to process recycle lines.

Section 2.5.2: Although it is true that the WQCC's action in establishing the new standards for radionuclides was not part of a national change in regulations, the Commission felt that is was appropriate to adopt these standards at Rocky Flats as these contaminants are present at the plant, there are no national

standards for plutonium and americium, and there are two public water supply reservoirs downstream of the plant site. See general comment above concerning debating standards.

Section 2.5.4: DOE should be performing the monitoring in Segment 5 that they have discussed here.

Section 3.1: DOE should be "exploring in depth" the implications of zero discharge on the downstream water rights as one of the vital initial steps in the zero discharge study required in the AIP.

Section 3.1.1: In the second paragraph, page 21, reference is made to a draft Contingency Plan. A final Contingency Plan should be referenced here even if not yet finalized.

Section 3.1.2: On page 22, although the treatment system was "designed" for radionuclide removal the system did not function that way.

Table 3.1: The table, page 29, includes a rounding error for plutonium. See table on previous page.

Section 3.2.4: In the last paragraph, page 31, reference is made to "three independent parties". Please identify the three parties by name. The cities have cut back their sampling efforts because of cost.

Section 3.2.6: The water, page 32, did not initially meet the standard for atrazine, although it does routinely meet the standards now. Water from C2 is not presently being treated.

Section 3.3.2: There are other interpretations to item 1, page 35, if one looks objectively at the data. (Contact Jeb Love, CDH, RFPU)

The selected results tabulation, pages 35 and 36, does not relate to a timeframe (none identified). Older data is higher because less control exerted historically.

Regarding the comparison review, page 37, please contact Jeb Love regarding the type of comparison review done by CDH and EPA which shows different results. Timeframe is important as Cotter Corporation's Schwartzwalder Mine used to discharge high concentrations of uranium into Ralston Creek which then flowed into Ralston Reservoir and was subsequently pumped to RFP. This was detected (at lower levels) in the RFP discharge (where impacted by Cotter).

Tables 3.2, 3.3 & 3.4: The tables, page 36, should include one for gross beta and the text should discuss it.

Section 3.3.3: The water from C2, page 41, does not routinely meet the Woman Creek standard for beta.

In the first two paragraphs of page 42, the running thirty day average rather than a single value is normally used in evaluating compliance with these standards. The statement concerning applying the standards to other waters is irrelevant.

Section 3.3.3: The Table 3.7 Americium values for Arvada, Denver and Thornton demonstrate the questionable validity of the RFP analysis. No other source of americium but RFP.

Section 3.4.1: This section, pages 42-44, is on Current Treatment, but study topics are inappropriately included, they belong to Section 3.4.2 or 4.4.3.

We would like to have a copy of the specific study referred to on page 43.

Section 4.1.2: The emergency response exercise in 1989 was canceled due to concern for the fullness of Pond C-2 and the fact that the dam moisture saturation was unknown (no piezometer). The recommendations of the DOE Environmental Tiger Team was that a piezometer be installed. This plan needs to address the recommendation. Please check the recommendation section of the Tiger Team report to see if there are other items that should be addressed.

Section 4.1.4: How will the valving on the C2 to BDD/B5 be configured to make sure that no inadvertent transfers take place. Will it be obvious to the valve operator that the water is going to the location requested?

Section 4.1.6: If the running 30-day average, page 51, exceeds the WQCC standards for the receiving body of water, the transfer should be terminated until additional appropriate treatment is initiated and/or the water is confirmed as meeting the standard.

The last sentence of the first paragraph, page 53, is unclear. DOE is responsible for notifying CDH, EPA and the local municipalities of the resumption of discharge.

Section 4.2.2: Regarding sampling methods, page 57, for water to be discharged unfiltered; don't take filtered samples to evaluate discharge. Take the sample from the treatment/non-treatment circumstance but it must be representative of what is to be discharged or the sample/data are invalid.

Section 4.4.1: Regarding the first paragraph, page 63, storm event sampling should also be used for supporting data on erosional transport.

Section 4.3.2: Regarding the use of indicator parameters, page 61, some of the parameters have no relationship with others. Alpha cannot be used for plutonium because plutonium standards are well below Alpha detection levels. Also, pH and other similar parameters may not be directly related to plutonium or americium. Please fully document the value and effectiveness of any indicator parameters proposed for real-time analysis.

Section 4.4.2: Regarding the last two bulleted items on page 63, where will the results of these last two evaluations be reported?

Section 4.4.3: How will the TSP work described on page 64 be integrated with the work described on pg. 44?

References: The references, page 66, do not include the Tiger Team Report on their DOE "action to be taken" Report. The Tiger Team Report recommended actions that should be addressed by the workplan.

APPENDIX I:

Figure II-5b: Include figure for gross beta for Woman Creek.

On page A-24, third paragraph, the standards are applied using the running 30 day average value. Single exceedances of the standard, as long as they are not exceedingly high values, would not cause "exceedance of the standards on a regular basis."

On page A-24, the fourth paragraph is unclear.

Please provide copies of those treatability studies which are complet including the data and analysis of the effectiveness of the "existing treatment system" for radionuclide removal. Please provide the workplans for those treatability studies which are still in process.